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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,379	03/23/2004	Jang-Kun Song	8071-128T (OPP 030152US)	1832
7590 F. Chau & Associates, LLC 130 Woodbury Road Woodbury, NY 11797			EXAMINER NGUYEN, THANH NHAN P	
			ART UNIT	PAPER NUMBER
			2871	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/806,379

Applicant(s)

SONG, JANG-KUN

Examiner

(Nancy) Thanh-Nhan P. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-41 is/are pending in the application.
- 4a) Of the above claim(s) 26-36 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-25, 38, 40 and 41 is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5, 6, 37 and 39 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Request for Continued Examination

The request for continued examination dated on 1/2/2007 has been acknowledged.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 5, 6, 37 and 39 are rejected under 35 U.S.C. 102(e) as being anticipated by Liu et al (US 2003/0227591).

Liu et al discloses (figs. 3B and 3C) a thin film transistor array panel comprising:

Claim 1:

- a substrate
- a plurality of first signal lines (22) formed on the substrate, extending in a first direction, and separated from each other by a predetermined interval
- a plurality of second lines (24) formed on the substrate, intersecting the first signal lines, and including a plurality of curved portions and intermediate portions

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extending in a second direction and alternately arranged by the predetermined interval

- wherein the intermediate portions intersect the first signal lines and extend from the curved portions at an angle with respect to the curved portions
- wherein each of the curved portions of the plurality of second lines comprises a pair of rectilinear portions connected to each other and making an angle of about 90 degrees
- a plurality of pixel electrodes (26A) located substantially in areas defined by the first and the second signal lines
- a plurality of thin film transistors (6) connected to the first and the second signal lines and the pixel electrodes

Claim 5:

- wherein the thin film transistors include terminal electrodes connected to the intermediate portions of the second signal lines

Claim 6:

- wherein the first signal lines intersect the intermediate portions of the second signal lines

Claim 37:

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- wherein the angle with respect to the curved portions is about 135 degrees

Claim 39:

- wherein the intermediate portions connect curved portions at each end of the intermediate portions

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al in view of Kim et al (US 6,784,965).

Regarding claim 3, Liu et al lacks disclosure of a plurality of third signal lines formed on the substrate, extending substantially in the first direction, and overlapping the pixel electrodes to form storage capacitors.

Kim et al discloses (fig. 15A) a plurality of third signal lines (164) formed on the substrate, extending substantially in the first direction, and overlapping the pixel electrodes (161) to form storage capacitors for the benefit of achieving extra storage capacitors. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have a plurality of third signal lines formed on the substrate, extending substantially in the first direction, and overlapping the pixel

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electrodes to form storage capacitors for the benefit of achieving extra storage capacitors.

Allowable Subject Matter

1. **Claim 4** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: There is no prior art of record that teaches or suggests a thin film transistor comprising a relationship of various elements as claimed with the specific allowable subject matter cited in the following:

- wherein the thin film transistors include terminal electrodes connected to the pixel electrodes and overlapping one of the third signal lines with interposing an insulator

2. **Claims 7-25, 38, 40 and 41** are allowed.

The following is an examiner's statement of reasons for allowance: There is no prior art of record that teaches or suggests a thin film transistor comprising a relationship of various elements as claimed with the specific allowable subject matter cited in the following:

- a gate line formed on the substrate and including a gate electrode
- a data line formed on the semiconductor layer at least in part and including a curved portion and an intermediate portion crossing the gate line substantially at

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a right angle, at least one of the curved portions and the intermediate portions having a source electrode

- wherein the intermediate portion extends from the curved portion at an angle with respect to the curved portion
- a pixel electrode formed on the first passivation layer, connected to the drain electrode, and having an edge extending substantially parallel to the curved portion of the data line
- a storage electrode line formed on the substrate, extending substantially parallel to the gate line, and including a storage electrode having an increased width with respect to a width of the storage electrode line

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 2002/0149729.

US 6,075,582.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to (Nancy) Thanh-Nhan P. Nguyen whose telephone number is 571-272-1673. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for

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the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

(Nancy) Thanh-Nhan P Nguyen
Examiner
Art Unit 2871

TN



David Nelms
Supervisory Patent Examiner
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